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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/928,182	08/10/2001	Naoto Hirota	KANEKO.001CPI	5570

7590 01/30/2004  
Muramatsu & Associates  
7700 Irvine Center Drive, Suite 225  
Irvine, CA 92618

EXAMINER

RUDE, TIMOTHY L

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 01/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/928,182

Applicant(s)

HIROTA, NAOTO

Examiner

Timothy L Rude

Art Unit

2871

-- Th MAILING DATE of this communication appears on th cover sh et with the correspond nc address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 3-7, 10-14 and 17-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 8, 9, 15 and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☒ Certified copies of the priority documents have been received in Application No. 09/142,448.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 20020103 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Sub-species A1 (Applicant indicated claims 1, 2, 9, and 15 read on the elected species with claim 1 Generic to Sub-species A1) in Paper No. 20031110 is acknowledged. Please note that claim 9 is dependent upon claim 8 and claim 16 is dependent upon claim 9, so claims 1, 2, 8, 9, 15, and 16 are examined.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1, 2, 8, and 9 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-4 of U.S. Patent No. 6,288,763 B1. Although the conflicting claims are not identical, they are not patentably distinct from each other because they essentially claim active matrix liquid

crystal display devices with zigzag pixel electrodes and zigzag common electrodes on the active matrix substrate with overlapping bend angle ranges.

3. Claims 1, 2, 8, and 9 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 of copending Application No. 10/419,319. Although the conflicting claims are not identical, they are not patentably distinct from each other because.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented they essentially claim active matrix liquid crystal display devices with zigzag pixel electrodes and zigzag common electrodes on the active matrix substrate with overlapping bend angle ranges.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical

Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Asada et al (Asada) USPAT 5,745,207.

As to claim 1, Asada teaches (entire patent and especially third embodiment), a liquid crystal display device having a plurality of pixels (Figure 4), comprising: a color filter substrate (col. 1, lines 26-28); an active matrix substrate (col. 7, lines 5-34); a liquid crystal layer provided between said color filter substrate and said active matrix substrate; a plurality of video signal lines provided on said active matrix substrate; a plurality of pixel electrodes, 4, provided on said active matrix substrate; a plurality of common electrodes, 2, provided on said active matrix substrate; a plurality of switching devices, 7 (Applicant's active elements) connected to said pixel electrodes and said video signal lines; wherein each of said pixel electrodes and common electrodes is bent two or more times for each pixel to form a zigzag shape.

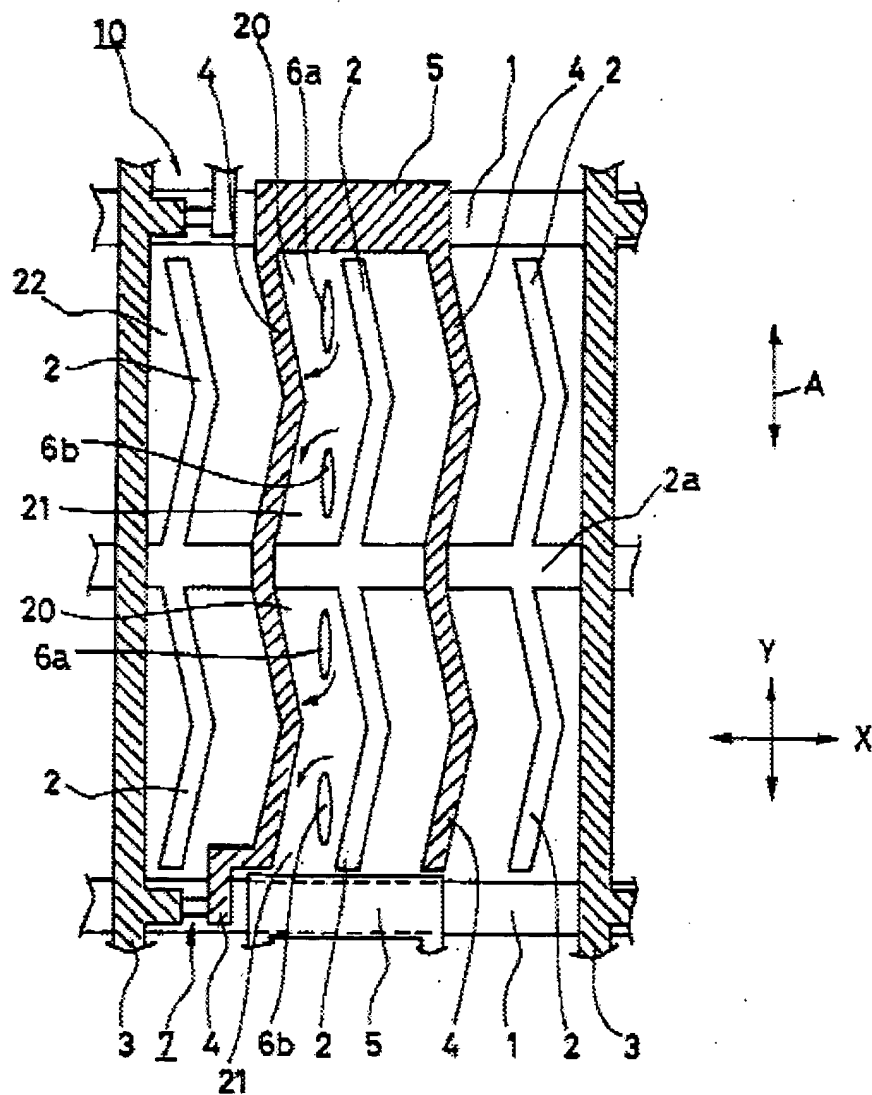


FIG. 4

2. A liquid crystal display device as defined in Claim 1, wherein, when using liquid crystal of positive dielectric constant anisotropy, angles of bent of said pixel electrodes and common electrodes relative to the alignment direction of the liquid crystal are within a range from 0 to 30 degrees (col. 7, lines 5-10, col. 4, lines 11-26, and col. 6, lines 25-44).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 8, 9, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asada.

As to claim 8, Asada teaches (entire patent and especially third embodiment), a liquid crystal display device (Figure 4) having a plurality of pixels, comprising: a color filter substrate for mounting color filters thereon (col. 1, lines 26-28); an active matrix substrate; a liquid crystal layer provided between said color filter substrate and said active matrix substrate; a plurality of video signal lines provided on said active matrix substrate; a plurality of pixel electrodes provided on said active matrix substrate; a plurality of common electrodes provided on said active matrix substrate; a plurality of active elements connected to said pixel electrodes and said video signal lines; wherein each of said pixel electrodes and common electrodes is bent two or more times for each pixel to form a zigzag shape.

Asada does not explicitly disclose in the third embodiment a video signal line bent two or more times for each pixel to form a zigzag shape.

Asada teaches in the second embodiment (col. 6, line 55 through col. 7, line 4) video signal lines (Figure 3) bent parallel with the electrodes (Applicant's bent two or

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more times for each pixel to form a zigzag shape) to thereby improve opening area (aperture ratio for better brightness/contrast) (col. 6, line 63 through col. 7, line 1).

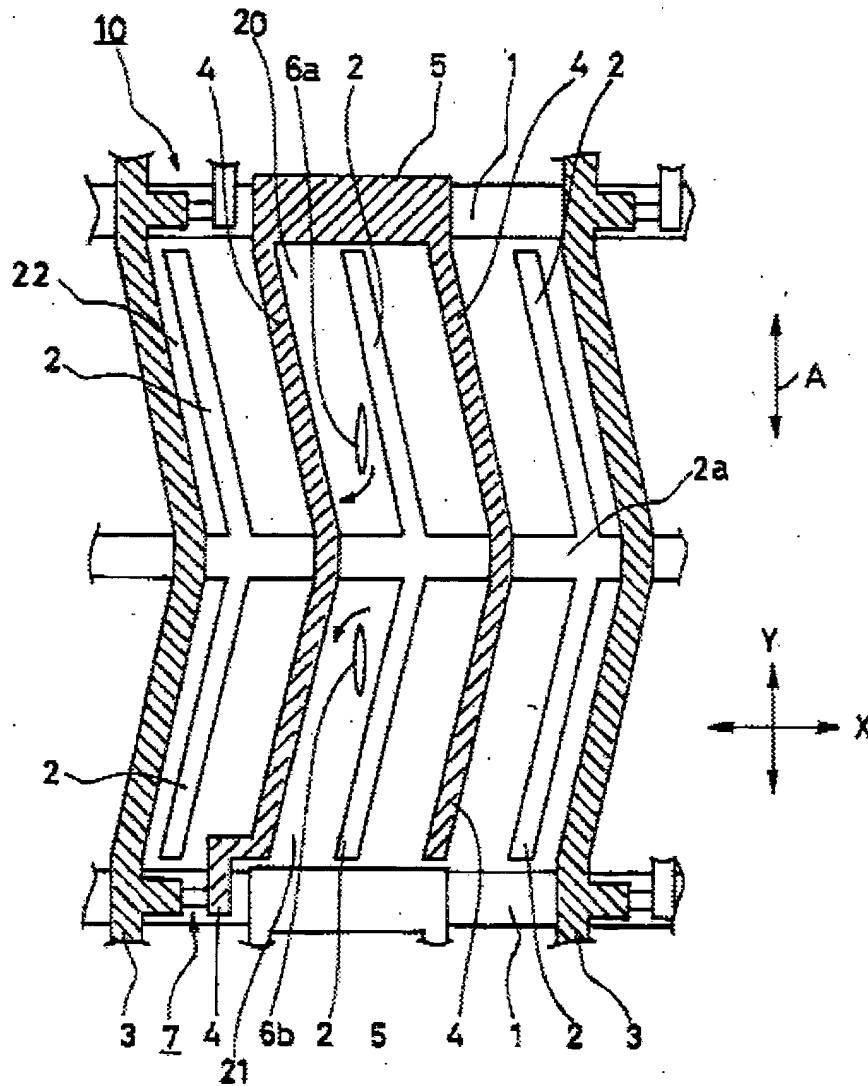


FIG. 3



Asada is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add bent video signal lines, bent parallel with the electrodes (Applicant's bent two or more times for each pixel to form a zigzag shape) to thereby improve opening area (aperture ratio for better brightness/contrast).

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Asada's third embodiment with the bent video signal lines, bent parallel with the electrodes of Asada's second embodiment to thereby improve opening area (aperture ratio for better brightness/contrast) which would result in Applicant's bent two or more times for each pixel to form a zigzag shape.

As to claim 9, Asada discloses the liquid crystal display device as defined in Claim 8, wherein, when using liquid crystal of positive dielectric constant anisotropy, angles of bent of said pixel electrodes, common electrodes and video signal lines relative to the alignment direction of the liquid crystal are within a range from 0 to 30 degrees (col. 7, lines 5-10, col. 4, lines 11-26, and col. 6, lines 25-44).

As to claims 15 and 16, Asada discloses a liquid crystal display device as claimed, wherein said pixel electrodes and common electrodes are bent by two or more different angles for each pixel per Figure 4. Please note the angles in areas along center wiring portion, 2a, as compared with the angles midway along electrodes.

References cited but not applied are relevant to the instant Application.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy L Rude whose telephone number is (703) 305-0418. The examiner can normally be reached on Monday through Thursday.

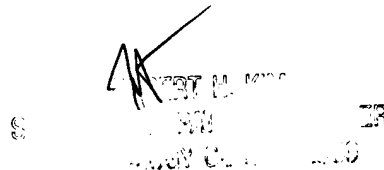
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on (703) 305-3492. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.



Timothy L Rude  
Examiner  
Art Unit 2871

TLR



Handwritten signature and stamp, likely a date stamp, located at the bottom right of the page.